THE CLAIMS:

1. (Canceled)

2. (Currently amended) An image processing apparatus ~~according to claim 1,~~ comprising:

~~a plurality of image sensing means for sensing object images from different directions; and~~

a first image sensing means for sensing an object image in a first direction to extract X_1 number of feature points from the object image;

a second image sensing means for sensing the object image in a second direction to extract X_2 number of feature points from the object image; and

~~normalization means for extracting feature points from the object images sensed by said plurality of image sensing means, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing predetermined information in each segmented region, and computing a feature pattern on the basis of the computed predetermined information.~~

a normalization means for extracting a plurality of feature points from first object image data obtained during sensing by the first image sensing means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from second object image data obtained during sensing by the second image sensing means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second object image data by a second method based on the X_2 number of feature points, segmenting the first feature region into a plurality of regions,

computing predetermined information in each segmented region, computing a first feature pattern based on the computed predetermined information, segmenting the second feature region into a plurality of regions, computing predetermined information in each segmented region, and computing a second feature pattern based on the computed predetermined information.

3. (Currently amended) An image processing apparatus ~~according to claim 1,~~ comprising:

~~a plurality of image sensing means for sensing object images from different directions;~~

a first image sensing means for sensing an object image in a first direction to extract X_1 number of feature points from the object image;

a second image sensing means for sensing the object image in a second direction to extract X_2 number of feature points;

~~normalization means for extracting feature points from the object images sensed by said plurality of image sensing means, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, and computing a feature pattern on the basis of the computed average value;~~

a normalization means for extracting a plurality of feature points from first object image data obtained during sensing by the first image sensing means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from second object data obtained in sensing by the second image sensing means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second image data by a second method based on the X_2 number

of feature points, segmenting the first feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a first feature pattern based on the computed average value, segmenting the second feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, and computing a second feature pattern based on the computed average value;

registration means for registering the first and second feature patterns computed by said normalization means as [[a]] feature patterns associated with a predetermined object; and

verification means for specifying an object associated with the object image by comparing the first and second feature patterns computed by said normalization means with the first and second feature patterns registered in said registration means.

4. (Currently amended) An apparatus according to claim 3, wherein said ~~plurality of~~ first and second image sensing means line up vertically, and

said normalization means computes the feature patterns using ~~one of a~~ the X_1 number of feature points ~~group~~ including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, and [[a]] the X_2 number of feature points ~~group~~ including central points of right and left pupils of the second object image data.

5. (Currently amended) An apparatus according to claim 3, wherein said ~~plurality of~~ first and second image sensing means line up horizontally, and

said normalization means computes the feature patterns using ~~one of a~~ the X_1 number of feature points ~~group~~ including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, and [[a]] the X_2 number of feature points ~~group~~ including central points of right and left pupils and a central point of a left or light nasal cavity of the second object image data ~~, and a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image~~.

6. (Currently amended) An apparatus according to claim 3, further comprising:

a third image sensing means for sensing the object image in a third direction to extract X_3 number of feature points from the object image; and

a fourth image sensing means for sensing the object image in a fourth direction to extract X_4 number of feature points from the object image,

wherein said ~~plurality of~~ first and second image sensing means line up ~~vertically and~~ horizontally; ~~and~~

said third and fourth image sensing means line up vertically;

~~said normalization means computes the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image, and a feature point group including central points of right and left pupils of the object image.~~

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said normalization means extracts a plurality of feature points from third object image data obtained in sensing by the third image sensing means, checks whether the number of the extracted plurality of feature points corresponds to a preset X_3 number, extracts a plurality of feature points from fourth object image data obtained in sensing by the fourth image sensing means, checks whether the number of the extracted plurality of feature points corresponds to a preset X_4 number, sets a third feature region on the third object image data by a third method based on the X_3 number of feature points, sets a fourth feature region on the fourth object image data by a fourth method based on the X_4 number of feature points, segments the third feature region into a plurality of regions, computes an average value of brightness levels in each segmented region, computes a third feature pattern based on the computed average value, segments the fourth feature region into a plurality of regions, computes an

average value of brightness levels in each segmented region, computes a fourth feature pattern based on the computed average value, and computes the first and second feature patterns and a third and fourth feature patterns by using the X_1 number of feature points including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, the X_2 number of feature points including central points of right and left pupils of the second object image data, the X_3 number of feature points including central points of right and left pupils and central points of right and left nasal cavities of the third object image data, and the X_4 number of feature points including central points of right and left pupils and central points of left or right nasal cavities of the third object image data;

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said registration means registers the first, second, third, and fourth feature patterns computed by said normalization means as feature patterns associated with a predetermined object;

said verification means specifies an object associated with the first, second, third, and fourth object image data by comparing the first, second, third and fourth feature patterns computed by said normalization means with the first, second, third and fourth feature patterns registered in said registration means.

7. (Currently amended) An apparatus according to claim 3, wherein said normalization means extracts feature vectors of different dimensions from the respective first and second object ~~images sensed~~ image data acquired by said ~~plurality of~~ first and second image sensing means, and arranges the extracted feature vectors of different dimensions in turn to integrate them as a multi-dimensional feature pattern.

8. (Currently amended) An apparatus according to claim 3, wherein said normalization means captures the first and second object ~~images sensed~~ image data acquired by said ~~plurality of~~ first and second image sensing means at predetermined time intervals,

computes feature patterns of the first and second object ~~images~~ image data of identical times, and arranges feature patterns of different times in turn to integrate them as a time-series feature pattern.

9. (Currently amended) An image processing apparatus ~~according to claim 1,~~ comprising:

~~image input means for sensing an object image from different positions, and inputting a plurality of object images at different image sensing positions;~~

an image input means for sensing an object image in a first direction to extract X_1 number of feature points from the object image, inputting first object image data obtained by the sensing, sensing the object image in a second direction to extract X_2 number of feature points from the object image, and inputting second object image data obtained by the sensing;

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~~feature extraction means for extracting feature patterns that represent features of an object from the plurality of object images input by said image input means;~~

a feature extraction means for extracting a plurality of feature points from the first object image data input by the image input means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from the second object image data input by the image input means, checking whether the number of the extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second object image data by a second method based on the X_2 number of feature points, extracting a first feature pattern from the first feature region, and extracting a second feature pattern from the second feature region;

verification means for verifying the ~~plurality of~~ first and second feature patterns extracted by said feature extraction means with [[a]] first and second reference feature ~~pattern which is~~ patterns which are registered in advance; and

discrimination means for, when at least one of the ~~plurality of~~ first and second feature patterns extracted by said feature extraction means matches the first and second reference feature ~~pattern which is~~ patterns which are registered in advance as a result of verification of said verification means, determining that an object associated with [[that]] the first and second object image data is a person himself or herself.

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10. (Currently amended) An apparatus according to claim 9, wherein said image input means has ~~a plurality of~~ first and second image sensing means which are set in advance at ~~a plurality of predetermined~~ first and second positions, and sense an object image from ~~a plurality of different~~ first and second positions, and inputs ~~a plurality of~~ the first and second object ~~images data at different~~ image data at the first and second image sensing positions using said ~~plurality of~~ first and second image sensing means.

11. (Currently amended) An apparatus according to claim 9, wherein said feature extraction means comprises~~:~~

~~feature point detection means for detecting feature points of an object from the input object image;~~

~~feature region setting means for setting a feature region on the basis of the feature points detected by said feature point detection means;~~

~~region segmentation means for segmenting the feature region set by said feature region setting means into a plurality of regions; and~~

~~feature pattern extraction means for computing brightness average values in the regions segmented by said region segmentation means, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.~~

a feature pattern extraction means for segmenting the first feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a first feature pattern based on the computed average value, segmenting the second feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, and computing a second feature pattern based on the computed average value.

12. (Currently amended) An image processing apparatus ~~according to claim 1~~ comprising:

image processing means for sensing object images from different directions, extracting feature points from the sensed object images, and computing a feature pattern on the basis of the extracted feature points;

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image input means for sensing an object image from different positions, and inputting a plurality of object images at different image sensing positions;

input image determination means for determining an image sensing position of an object image to be used from the plurality of object images input by said image input means upon registration of a feature pattern;

first feature extraction means for extracting a feature pattern which represents a feature of an object from the object image determined by said input image determination means;

registration means for registering the feature pattern extracted by said first feature extraction means as a reference feature pattern associated with the object in correspondence with position information indicating the image sensing position of the corresponding object image;

verification image selection means for selecting an object image at an image sensing position, which corresponds to the position information registered together with the feature

pattern of the object to be verified registered in said registration means, of the plurality of object images input by said image input means upon verification of a feature pattern;

second feature extraction means for extracting a feature pattern which represents a feature of the object from the object image selected by said verification image selection means; and

verification means for specifying an object associated with the object image by verifying the feature pattern extracted by said second feature extraction means with the feature pattern of the object to be verified registered in said registration means.

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13. (Currently amended) An image processing apparatus ~~according to claim 1, wherein an object image is input at different image sensing positions by moving at least one image sensing means to a plurality of predetermined positions and sensing an object image at respective positions.~~ comprising:

at least one image sensing means; and

an image input means for sensing an object image in a first direction by moving the image sensing means to a predetermined first position to extract X_1 number of feature points from the object image, inputting first object image data obtained by the sensing, sensing the object image in a section direction by moving the image sensing means to a predetermined second position to extract X_2 number of feature points from the object image, and inputting second object image data obtained by the sensing.

14. (Currently amended) An image processing apparatus ~~according to claim 1~~ comprising:

image processing means for sensing object images from different directions, extracting feature points from the sensed object images, and computing a feature pattern on the basis of the extracted feature points;

a plurality of image sensing means, respectively set in advance at a plurality of predetermined positions, for sensing an object image from a plurality of different positions;

determination means for determining a position of the image sensing means to be used of said plurality of image sensing means upon registration of a feature pattern;

first feature extraction means for extracting a feature pattern which represents a feature of an object from the object image obtained by the image sensing means determined by said determination means;

registration means for registering the feature pattern extracted by said first feature extraction means as a reference feature pattern associated with the object in correspondence with position information indicating the position of the image sensing means determined by said determination means;

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selection means for selecting the image sensing means at a position, which corresponds to the position information registered together with the feature pattern of the object in said registration means, of said plurality of image sensing means upon verification of a feature pattern;

second feature extraction means for extracting a feature pattern which represents a feature of the object from the object image obtained by the image sensing means selected by said selection means; and

verification means for specifying an object associated with the object image by verifying the feature pattern extracted by said second feature extraction means with the feature pattern of the object registered in said registration means.

15. (Original) An apparatus according to claim 14, wherein each of said first and second feature extraction means comprises:

feature point detection means for detecting feature points of an object from the input object image;

feature region setting means for setting a feature region on the basis of the feature points detected by said feature point detection means;

region segmentation means for segmenting the feature region set by said feature region setting means into a plurality of regions; and

feature pattern extraction means for computing brightness average values in the regions segmented by said region segmentation means, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.

16. (Canceled)

17. (Currently amended) An image processing method ~~according to claim 16,~~ comprising:

~~the first step of sensing object images from different directions; and~~

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the first step of sensing an object image in a first direction to extract X_1 number of feature points from the object image, and sensing the object image in a second direction to extract X_2 number of feature points from the object image; and

~~the second step of extracting feature points from the object images sensed in the first step, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing predetermined information in each segmented region, and computing a feature pattern on the basis of the computed predetermined information.~~

the second step of extracting a plurality of feature points from first object image data obtained by the sensing of the first step, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from second object image data obtained by the sensing of the first step, checking whether the number of the extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second object image data by a second method based on the X_1 number of feature points, segmenting the first feature region into a plurality of regions, computing predetermined information in each

segmented region, computing a first feature pattern based on the computed predetermined information, segmenting the second feature region into a plurality of regions, computing predetermined information in each segmented region, and computing a second feature pattern based on the predetermined information.

18. (Currently amended) An image processing method ~~according to claim 16,~~ comprising:

~~the first step of sensing object images from different directions;~~

the first step of sensing an object image in a first direction to extract X_1 number of feature points from the object image, and sending the object image in a second direction to extract X_2 number of feature points from the object image;

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~~the second step of extracting feature points from the object images sensed in the first step, setting a feature region on the basis of the extracted feature points, segmenting the set feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, and computing a feature pattern on the basis of the computed average value;~~

the second step of extracting a plurality of feature points from first object image data obtained by the sensing of the first step, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from second object image data obtained by the sensing of the first step, checking whether the number of the extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second object image data by a second method based on the X_2 number of feature points, segmenting the first feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a first feature pattern based on the computed average value, segmenting the second feature region into a plurality of regions, computing an

average value of brightness levels in each segmented region, and computing a second feature pattern based on the computed average value;

the third step of registering the first and second feature patterns computed in the second step as ~~a~~ feature patterns associated with a predetermined object; and

the fourth step of specifying an object associated with the object image by comparing the first and second feature patterns computed in the second step with the first and second feature patterns registered in the third step.

19. (Currently amended) A method according to claim 18, wherein the first step includes the step of sensing the object ~~images from different~~ image from the first and second directions which line up vertically, and

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the second step includes the step of computing the feature pattern using ~~one of a~~ the X_1 number of feature points ~~group~~ including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, and [[a]] the X_2 number of feature points ~~group~~ including central points of right and left pupils of the second object image data.

20. (Currently amended) A method according to claim 18, wherein the first step includes the step of sensing the object ~~images from different~~ image from the first and second directions which line up horizontally, and

the second step includes the step of computing the feature pattern using ~~one of a~~ the X_1 number of feature points ~~group~~ including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, and [[a]] the X_2 number of feature points ~~group~~ including central points of right and left pupils and a central point of a left or light nasal cavity of the second object image data ~~, and a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image~~.

21. (Currently amended) A method according to claim 18, wherein the first step includes the step of ~~simultaneously sensing object images from directions different in vertical and horizontal directions, and~~ sensing the object image in a third direction to extract X_3 number of feature points from the object image, and sensing the object image in a fourth direction to extract X_4 number of feature points from the object image;

said first and second directions are horizontal direction and said third and fourth directions are vertical direction;

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~~the second step includes the step of computing the feature pattern using one of a feature point group including central points of right and left pupils and central points of right and left nasal cavities of the object image, a feature point group including central points of right and left pupils and a central point of a left nasal cavity of the object image, a feature point group including central points of right and left pupils and a central point of a right nasal cavity of the object image, and a feature point group including central points of right and left pupils of the object image.~~

said second step includes extracting a plurality of feature points from third object image data obtained by the sensing in the third direction, checking whether the number of the extracted plurality of features points corresponds to a preset X_3 number, extracting a plurality of feature points from fourth object image data obtained by the sensing in the fourth direction, checking whether the number of the extracted plurality of feature points corresponds to a preset X_4 number, setting a third feature region on the third object image data by a third method based on the X_3 number of feature points, setting a fourth region on the fourth object image data by a fourth method based on the X_4 number of feature points, segmenting the third feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a third feature pattern based on the computed average value, segmenting the fourth feature region into a plurality of regions,

computing an average value of brightness levels in each segmented region, computing a fourth feature pattern based on the computed average value, computing the first and second feature patterns and a third and fourth feature patterns by using the X_1 number of feature points including central points of right and left pupils and central points of right and left nasal cavities of the first object image data, the X_2 number of feature points including central points of right and left pupils of the second object image data, the X_3 number of feature points including central points of right and left pupils and central points of right and left nasal cavities of the third object image data, and the X_4 number of feature points including central points of right and left pupils and central points of left or right nasal cavities of the third object image data;

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said third step registers the first, second, third, and fourth feature patterns computed in the second step as feature patterns associated with a predetermined object; and

said fourth step specifies an object associated with the first, second, third, and fourth object image data by comparing the first, second, third and fourth feature patterns computed by said second step with the first, second, third and fourth feature patterns registered in said third step.

22. (Currently amended) A method according to claim 18, wherein the second step includes the step of extracting feature vectors of different dimensions from respective the first and second object ~~images sensed~~ image data acquired in the first step, and arranging the extracted feature vectors of different dimensions in turn to integrate them as a multi-dimensional feature pattern.

23. (Currently amended) A method according to claim 18, wherein the second step includes the step of capturing the first and second object ~~images sensed~~ image data acquired in the first step at predetermined time intervals, computing feature patterns of the first and

second object ~~images~~ image data of identical times, and arranging feature patterns of different times in turn to integrate them as a time-series feature pattern.

24. (Currently amended) An image processing method ~~according to claim 16,~~ comprising:

~~the first step of sensing an object image from different positions, and inputting a plurality of object images at different image sensing positions;~~

the first step of sensing an object image in a first direction to extract X_1 number of feature points from the object image, inputting first object image data obtained by the sensing, sensing the object image in a second direction to extract X_2 number of feature points from the object image, and inputting second object image data obtained by the sensing;

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~~the second step of extracting feature patterns that represent features of an object from the plurality of object images input in the first step;~~

the second step of extracting a plurality of object image data from the first object image data input in the first step, checking whether the number of the extracted plurality of feature points corresponds to a preset X_1 number, extracting a plurality of feature points from the second object image data input in the first step, checking whether the number of extracted plurality of feature points corresponds to a preset X_2 number, setting a first feature region on the first object image data by a first method based on the X_1 number of feature points, setting a second feature region on the second object image data by a second method based on the X_2 number of feature points, extracting a first feature pattern from the first feature region, and extracting a second feature pattern from the second feature region;

the third step of verifying the ~~plurality of~~ first and second feature patterns extracted in the second step with [[a]] first and second reference feature patterns which are ~~is~~ registered in advance; and

the fourth step of determining, when at least one of ~~the plurality of~~ first and second feature patterns extracted in the second step matches the first and second reference feature

patterns which are ~~is~~ registered in advance as a result of verification of the third step, that an object associated with ~~that~~ the first and second object image data is a person himself or herself.

25. (Currently amended) A method according to claim 24, wherein the first step includes the step of inputting ~~a plurality of~~ the first and second object ~~images~~ image data at ~~different~~ the first and second image sensing positions using ~~a plurality of~~ first and second image sensing means which are set in advance at ~~a plurality of predetermined~~ first and second positions, and sense an object image from ~~a plurality of different~~ the first and second positions.

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26. (Currently amended) A method according to claim 24, wherein the second step includes~~:~~

~~the step of detecting feature points of an object from the input object image;~~

~~the step of setting a feature region on the basis of the detected feature points;~~

~~the step of segmenting the set feature region into a plurality of regions; and~~

~~the step of computing brightness average values in the segmented regions, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.~~

segmenting the first feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a first feature pattern based on the computed average value, segmenting the second feature region into a plurality of regions, computing an average value of brightness levels in each segmented region, computing a second feature pattern based on the computed average value.

27. (Currently amended) An image processing method ~~according to claim 16~~ comprising:

the first step of sensing object images from different positions, extracting feature points from the sensed object images, and computing a feature pattern on the basis of the

extracted feature points ~~the first step of sensing an object image from different positions~~, and inputting a plurality of object images at different image sensing positions;

the second step of determining an image sensing position of an object image to be used from the plurality of object images input in the first step upon registration of a feature pattern;

the third step of extracting a feature pattern which represents a feature of an object from the object image determined in the second step;

the fourth step of registering the feature pattern extracted in the third step as a reference feature pattern associated with the object in correspondence with position information indicating the image sensing position of the corresponding object image;

a1 the fifth step of selecting an object image at an image sensing position, which corresponds to the position information registered together with the feature pattern of the object to be verified registered in the fourth step, of the plurality of object images input in the first step upon verification of a feature pattern;

the sixth step of extracting a feature pattern which represents a feature of the object from the object image selected in the fifth step; and

the seventh step of specifying an object associated with the object image by verifying the feature pattern extracted in the sixth step with the feature pattern of the object to be verified registered in the fourth step.

28. (Currently amended) An image processing method ~~according to claim 16, wherein an object image is input at different image sensing positions by moving at least one image sensing means to a plurality of predetermined positions and sensing an object image at respective positions.~~ comprising:

the step of sensing an object image in a first direction by moving an image sensing means to a predetermined first position to extract X_1 number of feature points from the object

image, inputting first object image data obtained by the sensing, sensing the object image in a second direction by moving the image sensing means to a predetermined second position to extract X_2 number of feature points from the object image, and inputting second object image data obtained by the sensing.

29. (Currently amended) An image processing method ~~according to claim 16,~~ comprising:

the first step of sensing object images from different positions, extracting feature points from the sensed object images, and computing a feature pattern on the basis of the extracted feature points, wherein the first step of inputting a plurality of object images at different image sensing positions ~~using~~ uses a plurality of image sensing means, respectively set in advance at a plurality of predetermined positions, for sensing an object image from a plurality of different positions;

the second step of determining a position of the image sensing means to be used of said plurality of image sensing means upon registration of a feature pattern;

the third step of extracting a feature pattern which represents a feature of an object from the object image obtained by the image sensing means determined in the second step;

the fourth step of registering the feature pattern extracted in the third step as a reference feature pattern associated with the object in correspondence with position information indicating the position of the image sensing means determined in the second step;

the fifth step of selecting the image sensing means at a position, which corresponds to the position information registered together with the feature pattern of the object in the fourth step, of said plurality of image sensing means upon verification of a feature pattern;

the sixth step of extracting a feature pattern which represents a feature of the object from the object image obtained by the image sensing means selected in the fifth step; and

the seventh step of specifying an object associated with the object image by verifying the feature pattern extracted in the sixth step with the feature pattern of the object registered in the fourth step.

30. (Original) A method according to claim 29, wherein each of the third and sixth steps includes:

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the step of detecting feature points of an object from the input object image;

the step of setting a feature region on the basis of the detected feature points;

the step of segmenting the set feature region into a plurality of regions; and

the step of computing brightness average values in the segmented regions, and extracting a feature pattern which represents a feature of the object on the basis of the brightness average values.